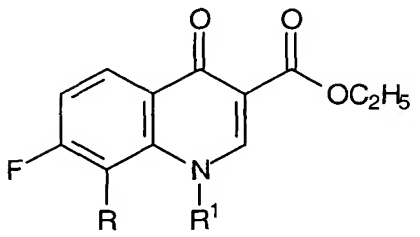
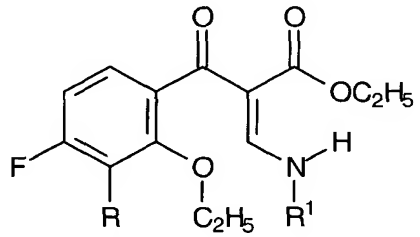
WHAT IS CLAIMED IS:

1. A process for preparing a quinolone antibiotic intermediate having the formula:



wherein R is C_1-C_2 alkyl, C_1-C_2 fluoroalkyl, C_2-C_4 alkenyl, methoxy, chloro, or bromo; R^1 is a unit selected from the group consisting of C_1-C_2 alkyl, C_2-C_3 alkenyl, C_3-C_5 cycloalkyl, and phenyl, each of which can be substituted by one or more fluorine atoms; said process comprising the step of cyclizing an admixture of quinolone precursors, said admixture comprising a 2-ethoxy substituted intermediate having the formula:



in the presence of a silylating agent.

2. A process according to Claim 1 wherein R is $-OCH_3$.

3. A process according to Claim 1 wherein R is $-CH_3$, $-CH_2F$, $-CHF_2$, and $-CF_3$.

4. A process according to Claim 1 wherein R is –Cl.

5. A process according to Claim 1 wherein R is $-CH_2CH=CH_2$.

6. A process according to Claim 1 wherein said cyclization is conducted in the presence of a solvent selected from the group consisting of methylene chloride, dichloromethane, hexamethylphosphoramide, tetrahydrofuran, benzene, toluene, alkanes, and mixtures thereof.

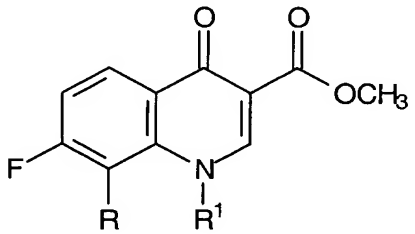
7. A process according to Claim 1 wherein said silylating agent is selected from the group consisting of chlorotrimethylsilane, N,O-bis(trimethyl-silyl)acetamide, N,O-bis(trimethylsilyl)trifluoroacetamide, bis(trimethylsilyl)urea, hexamethyltrisilazane, N-methyl-N-trimethylsilyltrifluoroacetamide, 1-trimethylsilyl-imidazole, trimethylsilyl trifluourmethanesulfonate, *tert*-butyldimethylchlorosilane, 1-(*tert*-butyldimethylsilyl)imidazole, N-*tert*-butyldimethyl-N-methyltrifluoroacetamide, *tert*-butyldimethylsilyltrifluoromethanesulfonate, *tert*-butylphenylchorosilane, *tert*-butyl-methoxyphenylbromosilane, dimethylphenylchlorosilane, triethylchlorosilane, trimethyl-silyl trifluoromethanesulfonate, and triphenylchlorosilane.

8. A process according to Claim 7 wherein said silylating agents is N,O-bis(trimethylsilyl)acetamide.

9. A process according to Claim 1 wherein R^1 cyclopropyl, methyl, ethyl, and benzyl.

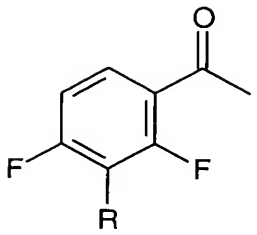
10. A process according to Claim 1 wherein said cyclization is conducted by refluxing in the presence of a solvent.

11. A process for preparing a quinolone antibiotic intermediate having the formula:

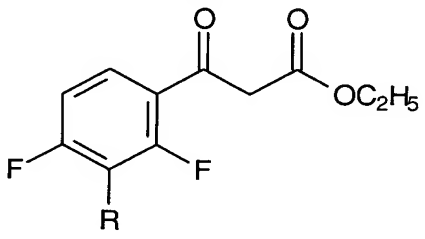


wherein R is C_1-C_2 alkyl, C_1-C_2 fluoroalkyl, C_2-C_4 alkenyl, methoxy, chloro, or bromo; R^1 is a unit selected from the group consisting of C_1-C_2 alkyl, C_2-C_3 alkenyl, C_3-C_5 cycloalkyl, and phenyl, each of which can be substituted by one or more fluorine atoms; said process comprising the steps of:

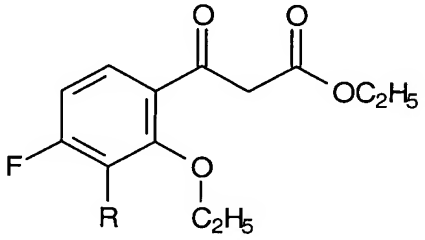
a) reacting an acetophenone having the formula:



with diethylcarbonate in the presence of a base to form an admixture of 4-fluoro β-ketoesters having the formula:

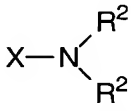


; and

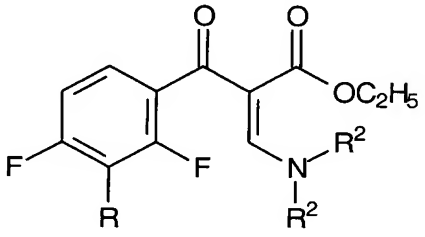


;

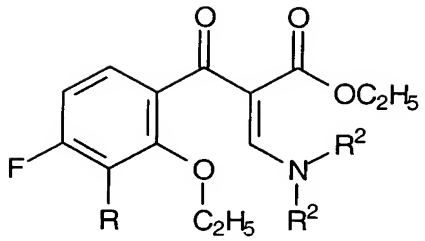
b) reacting said admixture with a Knoevenagel Reaction adduct having the formula:



wherein R^2 is C_1-C_4 linear or branched alkyl, phenyl, and mixtures thereof; X is an aldehyde unit or an aldehyde unit equivalent; to form an admixture of imine intermediates having the formula:



; and

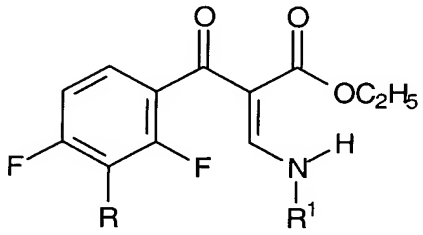


;

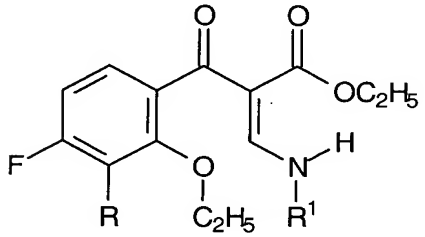
c) reacting said imine intermediate admixture with an amine having the formula:

$$R^1—NH_2$$

to form an admixture of quinolone intermediates having the formula:

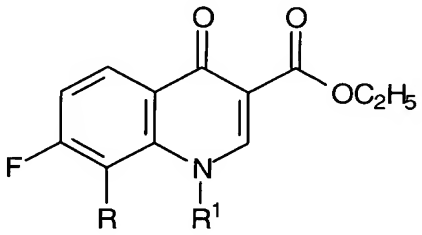


; and



;

d) cyclizing said quinoline intermediate admixture in the presence of a silylating agent to form said quinoline antibiotic intermediate having the formula:



12. A process according to Claim 11 wherein said base in step (a) is a metal hydride selected from the group LiH, NaH, KH, CaH_2 and mixtures thereof.

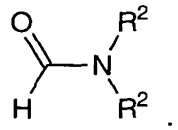
13. A process according to Claim 11 wherein said base in step (a) is an inorganic base selected from the group Na_2CO_3, $NaHCO_3$, K_2CO and mixtures thereof.

14. A process according to Claim 11 wherein said base in step (a) an organic base selected from butyl lithium and lithium diisopropylamide.

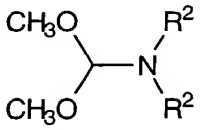
15. A process according to Claim 11 wherein step (a) comprises reacting one mole of a substituted acetophenone with 2.2 moles of a base, and 2.4 moles of diethylcarbonate.

16. A process according to Claim 11 wherein step (a) is conducted in the presence of a solvent selected from the group consisting of methylene chloride, dichloro-methane, hexamethylphosphoramide, tetrahydrofuran, benzene, toluene, alkanes, and mixtures thereof.

17. A process according to Claim 11 wherein said adduct is an aldehyde having the formula:



18. A process according to Claim 11 wherein said adduct is a dimethyl acetal having the formula:



wherein R^2 is methyl, ethyl, and mixtures thereof.

19. A process according to Claim 11 wherein step (b) is conducted in the presence of toluene wherein said adduct is a dimethyl acetal and wherein further the admixture obtained from step (a) and said dimethyl acetal is heat to azeotropically remove any methanol which is formed.

20. A process according to Claim 11 wherein said primary amine in step (c) is selected from the group consisting of methylamine, ethylamine, and cyclopropylamine.

21. A process according to Claim 11 wherein step (c) is conducted in the presence of a solvent selected from the group consisting of methylene chloride, dichloromethane, hexamethylphosphoramide, tetrahydrofuran, benzene, toluene, alkanes, and mixtures thereof.

22. A process according to Claim 11 wherein step (d) is conducted in the presence of a solvent selected from the group consisting of methylene chloride, dichloromethane, hexamethylphosphoramide, tetrahydrofuran, benzene, toluene, alkanes, and mixtures thereof.

23. A process according to Claim 11 wherein said silylating agent is selected from the group consisting of chlorotrimethylsilane, N,O-bis(trimethyl-silyl)acetamide, N,O-bis(trimethylsilyl)trifluoroacetamide, bis(trimethylsilyl)urea, hexamethyltrisilazane, N-methyl-N-trimethylsilyltrifluoroacetamide, 1-trimethylsilyl-imidazole, trimethylsilyl trifluourmethanesulfonate, *tert*-butyldimethylchlorosilane, 1-(*tert*-butyldimethylsilyl)imidazole, N-*tert*-butyldimethyl-N-methyltrifluoroacetamide, *tert*-butyldimethylsilyltrifluoromethane sulfonate, *tert*-butylphenylchorosilane, *tert*-butyl-methoxyphenylbromosilane, dimethylphenylchlorosilane, triethylchlorosilane, trimethyl-silyl trifluoromethanesulfonate, and triphenylchlorosilane.

24. A process according to Claim 23 wherein said silylating agents is N,O-bis(trimethylsilyl)acetamide.

25. A process according to Claim 11 wherein step (d) is conducted by refluxing in the presence of a solvent.